



High Desert Power Project, LLC

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June 4, 2009

Mr. Steve Munro
Compliance Project Manager
California Energy Commission MS-2000
1516 Ninth Street
Sacramento, CA 95814

Via Overnight Courier

**RE: High Desert Power Project, LLC
Docket No. 97-AFC-1
Supplement to Petition for Modification to Use Reclaimed Water
Title 22 Engineering Report**

Dear Mr. Munro:

Enclosed please find the above-referenced Supplement and Title 22 Engineering Report in support of High Desert Power Project, LLC's Petition for Modification to Use Reclaimed Water.

Should you have any questions or need additional information regarding this submittal, please contact me in Omaha at (402) 691-9736 or Jon Boyer at the plant at (760) 530-2303.

Sincerely,

A handwritten signature in black ink that reads "M. Fred Strauss". The signature is fluid and cursive.

M. Fred Strauss, P.G.
Director, Environmental Programs

Enclosures



**SUPPLEMENT TO PETITION FOR MODIFICATION
TO USE RECLAIMED WATER**

**Submitted by the High Desert Power Project
To Modify
CEC Docket No. 97-AFC-1**

For Submittal to:

**California Energy Commission
Energy Facilities Siting and Environmental Protection Division
1516 9th Street
Sacramento, California 95814-5512**

June 4, 2009

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1.0 Introduction

1.1 Overview of the Supplement

In May 2000, the California Energy Commission (“Commission”) issued its Final Decision for the Application of Certification to High Desert Power Project, LLC (“HDPP”) for the High Desert power project (the “Facility”). On August 12, 2008, HDPP¹ filed a Petition for Modification (the “Petition”) to remove the prohibition on the use of reclaimed water at the Facility. This prohibition is contained in Soil and Water Condition-1 in the Final Decision in A.97-AFC-1; however, use of reclaimed water will allow HDPP to reduce the amount of State Water Project (“SWP”) water it uses and consumes to generate electricity, allowing other beneficial use of this valuable surface water source.²

In response to subsequent data requests, HDPP provided more detailed information regarding the short 18-inch diameter reclaimed water pipeline, approximately 1,000 feet in length,³ that would interconnect the Facility to the City of Victorville’s (the “City”) existing 16-inch diameter reclaimed water pipeline. HDPP also clarified in its response to Commission Staff data requests that HDPP was requesting revision of the aquifer banking requirements in Soil and Water Condition-4.

On April 20, 2008, the Commission Staff issued a “Staff Analysis” on the Petition. The Staff Analysis stated that the Staff concurs with the proposal to remove the prohibition against the use of reclaimed water. The Staff Analysis concludes that with the removal of this prohibition, the Facility will remain in compliance with applicable laws, ordinances, regulations and standards and that the proposed modification will not result in a significant adverse or cumulative impact on the environment.

However, the Staff Analysis also states that it requires additional information, including a description of the reclaimed water supply and reclaimed water pipeline in order to make a recommendation regarding the proposed revisions to Soil and Water Condition-4. The Staff Report stated that “The project owner currently has no commitment for supply and delivery of recycled waste water, a use permit or the water quality characterization necessary to design the project changes. Therefore, there is insufficient information for staff to analyze project impacts and identify which LORS would be required for project compliance.” The Staff Report indicated that HDPP should submit an additional filing when it knows more about “the recycled waste water supply and water quality characteristics and have designed the necessary plant modifications.”

¹ The April 16, 2009 Staff Analysis prepared by Casey Weaver incorrectly identifies the current owner of the Facility as Constellation Energy Group. HDPP was a subsidiary of Constellation but Constellation sold HDPP and other companies to TPF Generation Holdings, LLC in 2006.

² The terms “reclaimed” and “recycled” are used interchangeably in this Supplement to maintain consistency with previously submitted documents and with reference to applicable state regulations.

³ Since the February 4, 2009 data request submittal, the design of the reclaimed water pipeline has been lengthened to approximately 1,700 feet to account for the connection for discharge into the cooling tower, as described in this Supplement.

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By this Supplement to the Petition, HDPP seeks to clarify that it is requesting three changes in its license:

- (1) Removal of the prohibition on the use of reclaimed water as set forth in Soil and Water Condition-1.
- (2) Authorization to interconnect to the City's existing reclaimed water pipeline, via a new underground water pipeline approximately 1,700 feet long that will run along the perimeter of the Facility site, and use reclaimed water provided to the Facility by the City.
- (3) Modification of the aquifer banking requirements in Soil and Water Condition-4 to reflect reclaimed water use.

In order to facilitate the review and approval of these requested changes, this Supplement includes a more detailed description of the proposed modifications and the characteristics of the reclaimed water supply and delivery system.

A Title 22 Engineering Report has been prepared and submitted to the Lahontan Regional Water Quality Control Board ("RWQCB"). A copy of the Engineering Report will be filed with the Commission under separate cover. This Supplement contains information from the Engineering Report that is relevant to the Petition. HDPP and the City are currently negotiating an agreement for the reclaimed water supply. A copy of the agreement will be filed with the Commission when it is executed by the parties. In the past, the Commission has routinely approved certification of power plants on the condition that an agreement be executed post-certification. Therefore, it is not necessary for the Commission to receive an executed copy of the agreement before it approves this Petition.

With this Supplemental information, the Commission should now have all of the required information it needs for timely review and approval of the Petition. Given that more than eight months has elapsed between the filing of this Petition and the issuance of the Staff Analysis, it is now urgent that the Commission complete its review of this Petition and issue a decision. An expedited decision on this Petition should be made because:

- The use of reclaimed water is fully consistent with State policy; further delay in approving the Petition would be an unnecessary waste of fresh water supplies.
- The infrastructure is very simple, consisting solely of an underground reclaimed water pipeline running approximately 1,700 feet along the perimeter of the HDPP site. As explained below, this type of interconnection is typically categorically exempt from CEQA review. Although this type of facility is typically exempt from CEQA review, this Supplement demonstrates that the approval of the reclaimed water pipeline connection will not result in a significant impact to the environment and complies with all laws, ordinances, regulations, and standards ("LORS").

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- All reclaimed water received by the Facility will meet Title 22 standards and be subject to oversight by the RWQCB. Therefore the quality of the reclaimed water does not require additional analysis by the Commission.

1.2 Summary of Environmental Impacts

Section 1769 (a)(1)(E) of the Commission's Siting Regulations requires that a Petition contain a discussion of any impacts the proposed modification might have on the environment and proposed measures to mitigate any significant adverse impacts. In addition, Section 1769 (a)(1)(F) of the Siting Regulations requires a discussion of the impacts the certification of the proposed modifications might have on the Facility's ability to comply with LORS. Section 3.0 of this Supplement includes a discussion of the potential environmental impacts of the new reclaimed water pipeline, as well a discussion of the consistency of the certification of the reclaimed water pipeline with LORS. Section 3.0 concludes that with the proposed mitigation measures, there will be no significant environmental impacts associated with the proposed modifications as supplemented herein and that the Facility will comply with applicable LORS.

1.3 Consistency of Amendment with License

Section 1769 (a)(1)(D) of the Commission's Siting Regulations requires a discussion of the Amendment's consistency with the LORS and whether the modifications are based upon new information that changes or undermines the assumptions, rationale, findings, or other basis of the Final Decision. If the project is no longer consistent with the license, an explanation why the modification should be permitted must be provided. The proposed reclaimed water pipeline is consistent with applicable LORS. In addition, the proposed reclaimed water pipeline is not based upon new information that changes or undermines any basis for the Final Decision.

2.0 Description of the Reclaimed Water System

Consistent with the Commission’s Siting Regulations Section 1769 (a)(1)(A) and 1769(a)(1)(B), this section includes a complete description of the proposed reclaimed water pipeline as well as the necessity for the Amendment.

2.1 Project Background

The Facility is an 830 Megawatt (nominal output) natural gas-fired combined-cycle electric generating station. The Facility is located on a 25-acre parcel in the northeast corner of the Southern California Logistics Airport (“SCLA”), formerly part of George Air Force Base, in the City of Victorville, San Bernardino County, California. The land is owned by the U.S. Government and is leased to the City, which subleases the land to the Facility. Property to the south, north, and west is airport property.

The Facility is bordered to the east by Perimeter Road. To the west is previously graded but undeveloped land extending to the airport operations area. To the south are abandoned armament bunkers from George Air Force Base, a parking area with truck trailers, and a storage area for use by the airport. The Facility is located in Section 24, Township 6 North, Range 5 West.

The Facility uses State Water Project (“SWP”) water from the California Aqueduct as its primary source of water. However, when the SWP water is not available, the Facility withdraws and uses SWP water that has been previously injected into the Facility’s Aquifer Banking System (“ABS”). A small amount of water is sometimes recycled for cooling tower use from the ABS ultrafiltration system, the filter backwash cleaning water, and the zero liquid discharge (“ZLD”) system. See Appendix A for a water balance diagram of the overall water treatment process.

HDPP anticipates using a blend of reclaimed water and SWP water for cooling tower make-up water at the Facility. The reclaimed water to SWP water ratio will vary depending on the water quality of each source and the water demand. The Facility estimates an approximate usage of up to 1,000 acre-feet per year of reclaimed water.

2.2 Source of the Reclaimed Water Supply

The Victor Valley Wastewater Reclamation Authority (“VWVRA”) owns and operates the Victor Valley Wastewater Reclamation Plant (“VWWRP”). The VWVRA produces disinfected tertiary-treated water at the VWWRP that meets Title 22 standards. The VWVRA will provide the reclaimed water to the City. The City, or its Victorville Water District (“VWD”)

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subsidiary⁴, will distribute the reclaimed water obtained from the VVWRA to the Facility.⁵ HDPP is currently negotiating a contract with the City for a supply of reclaimed water. When the contract is executed by the parties, a copy of the contract will be filed with the Commission.

The VVWRP will produce the reclaimed water used by the Facility from municipal wastewater which has gone through sedimentation, oxidization, coagulation, filtration, and disinfection processes after having passed through screening, primary and secondary treatment processes (refer to Appendix B – VVWRP Design Criteria). Reclaimed water must meet the Title 22 requirements to be used for any application within California. The RWQCB (Board Order No. R6V-2003-028) issued water recycling requirements for the system at the VVWRP which are consistent with Title 22. Title 22 requirements for recycled water are shown below.

Title 22 Recycled Water Requirements

Parameter	Value
Turbidity	Less than 2 NTU Average
Turbidity	Greater than 5 NTU not more than 5 percent of the time during a 24-hour period
Turbidity	Less than 10 NTU at all times
Total Coliform Bacteria	2.2 MPN per 100 ml per sample, median reading not to exceed over any 7-day continuous period
Total Coliform Bacteria	23 MPN per 100 ml per sample, not to occur more than once within 30 days
Total Coliform Bacteria	240 MPN per 100 ml in any sample
Disinfection CT	Greater than or equal to 450 mg-min/L with a minimum modal contact time of at least 90 minutes under peak dry weather conditions

NOTES:

CT = The product of chlorine residual concentration and detention time

mgd = million gallons per day

mg-min/L = milligram-minutes per liter

ml = milliliters

MPN = most probable number

NTU = nephelometric turbidity units

Per Title 22 Section 60306, disinfected tertiary-treated water can be used for industrial purposes such as make-up for cooling towers. For the proposed use of reclaimed water at the Facility, VVWRA will produce water satisfying the previously listed requirements. VVWRA currently produces reclaimed water which is provided to the City and then to the Westwinds Golf Course in Victorville, California for irrigation via a 16-inch diameter reclaimed water pipeline.

⁴ References in this Supplement to the City are intended to include the VWD to the extent that the VWD, rather than the City, becomes the party to the reclaimed water contract or the party that constructs, owns or operates the City reclaimed water pipeline described herein.

⁵ Commission Staff have encouraged HDPP to obtain and use recycled wastewater from VVWRA and other sources (see page 7 of the April 16, 2009 Staff Analysis). The City is currently constructing a new industrial wastewater treatment plant which will also produce Title 22 recycled water. In the future, the City may determine that some Title 22 recycled water delivered to the Facility may originate at the City's new treatment plant in addition to that produced at the VVWRA. However, no additional construction will be required at the Facility site and all recycled water delivered to the Facility will be conveyed through the City's existing 16-inch diameter reclaimed water pipeline to the proposed 18-inch diameter reclaimed water pipeline as described in this Supplement.

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The proposed 18-inch diameter reclaimed water pipeline to the Facility cooling tower will tap into this 16-inch diameter existing reclaimed water transmission pipeline on Perimeter Road between the VVWRP and the Westwinds Golf Course (see Figure 1). VVWRP compliance with Title 22 requirements will be maintained during this modification and any future capacity expansions and operational improvements.

The VVWRA has filed a Title 22 Engineering Report and an amended Title 22 Engineering Report (with a chlorine contact basin tracer study) with the RWQCB and the California Department of Public Health (“CDPH”). As capacity expansions and operational improvements are contemplated for the VVWRP, compliance with Title 22 requirements will be maintained.

HDPP has filed a Title 22 Engineering Report with the RWQCB describing use of reclaimed water at the Facility. A copy of this report will be filed with the Commission under separate cover.

2.3 Existing Water Treatment Processes at the Facility

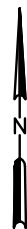
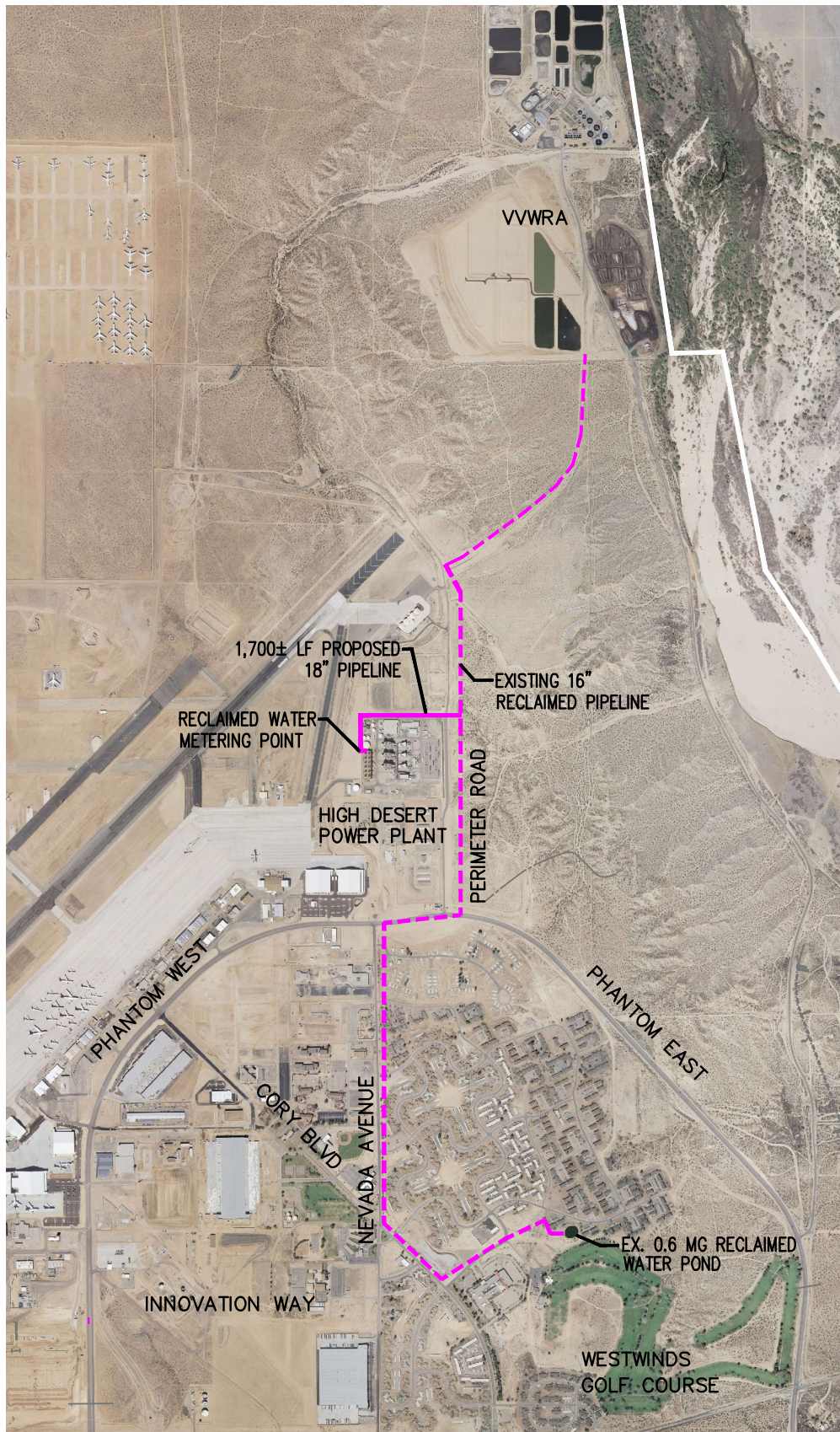
Appendix A shows the existing water balance diagram of the Facility water treatment system including the point where the reclaimed water will be introduced into the cooling tower basin.

For background purposes, it may be helpful to describe the existing water treatment processes at the Facility. The SWP water is treated at an onsite treatment facility before it is used for power plant operations or injected into the ABS when SWP water is available for that purpose. The SWP water enters the plant at a flow rate of up to 5,850 gallons per minute (“gpm”). The plant pre-treatment system for the SWP water includes suspended solids and turbidity removal. Clarified SWP water is supplied to the ABS system and the power block. The clarified SWP water that will be used as cooling tower make-up water is stored in the clarified water tank and pumped to the cooling tower basin as needed.

The existing supply line to the cooling tower basin has an air gap of more than 1 foot to prevent backflow and cross-connection. The maximum capacity of the make-up water pumps is 4,700 gpm, although typical daily water consumption averages between 2,500 to 3,000 gpm. The blowdown from the cooling tower basin is treated through the ZLD system, consisting of a softener, microfiltration (“MF”) system, a reverse osmosis (“RO”) system and a crystallizer. The RO permeate supplies a portion of the cooling tower make-up water and all of the steam cycle make-up.

The ABS water treatment system, which operates separately from the SWP water treatment for cooling tower make-up, consists of a sand and granulated activated carbon filter and a UF system. A small flow of water coming from the UF backwash system supplies the cooling tower make-up water. The UF permeate is treated using ultraviolet (“UV”) disinfection prior to injection into the ABS injection/extraction wells.

Figure 1
Site Layout
May 14, 2009



SCALE: 1" = 2000'

Under no circumstances will the reclaimed water be cross-connected with other water systems. In addition, under no circumstances will the reclaimed water be allowed to enter the ABS. The treated SWP water will continue as the only source for the ABS injection wells.

2.4 Monitoring and Reporting of Reclaimed Water Quality

The VVWRA will be responsible for monitoring the quality of the reclaimed water. If the reclaimed water quality drops below the Title 22 recycled water criteria presented in Table 1, the VVWRA will not be permitted to provide reclaimed water to the City for distribution to HDPP. Any noncompliance with the water recycling requirements must be reported to the RWQCB, San Bernardino County Department of Public Health (“DPH”) and the CDPH by the VVWRA.

The reclaimed water system will have an in-line automated station at the Facility to monitor the quality of the reclaimed water including conductivity, turbidity, and chlorine residual. If the reclaimed water does not meet the water quality requirements of the Facility, an automated valve will shut-off reclaimed water to the cooling tower basin. Any shortfall will be made up with SWP water or water from the ABS system.

2.5 Description of the New Reclaimed Water Pipeline System

The proposed 18-inch diameter reclaimed water pipeline will connect to the existing 16-inch diameter reclaimed water pipeline near the northeast corner of the HDPP site. This proposed pipeline will be an 18-inch-diameter American Water Works Association (“AWWA”) C-905 polyvinyl chloride (PVC) underground water pipeline which will run westerly along the north side of Facility site, and past the City’s existing pump station before turning south along the west boundary of the Facility site. Once the reclaimed water pipeline reaches the area by the northwest side of the cooling tower, it will travel easterly, cross the fence line and into the Facility site, and rise aboveground adjacent to the cooling tower, terminating in a new isolation and control valve station. The valve and control station piping will run aboveground to discharge into the cooling tower basin.

A below-ground flow meter will be located at the west boundary of the Facility site at the fence line near the northwest side of the cooling tower. The City will construct, own, and operate the meter, as well as the pipeline upstream of the meter. HDPP will construct, own, and operate the portion of the reclaimed water pipeline within the Facility site. Responsibility for and title to the reclaimed water will transfer from the City to HDPP at the downstream side of the below-ground meter.

The proposed 18-inch reclaimed water pipeline will not cross over or cross-connect with any active Facility water pipeline inside the Facility. Appendix C contains relevant Facility drawings which illustrate the following:

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Drawing Name or Number	Features Shown
Final Site Plan	Plan view traverse of proposed 18-inch recycled water pipeline into the Facility cooling tower.
2005-068-CP-001 2005-068-CP-002	The proposed 18-inch recycled water pipeline will cross the City's existing 12-inch potable water pipeline in two places outside of the Facility site boundary. The first crossing location is in the northwest corner outside the Facility site boundary. The second crossing occurs when the recycled water pipeline turns east towards the cooling tower. In the second location, the City's 12-inch potable water pipeline runs parallel to the fence line on the west that marks the Facility site boundary.

Additional drawings may be found in the Title 22 Engineering Report.

2.6 Piping within the Project Site

The Facility site is restricted to a focused group of plant operators who can be identified and communicated with effectively using signage and training. The HDPP site is not subject to access by the general public and site access is controlled by onsite personnel 24 hours a day, 7 days a week. In addition, the entire Facility site is surrounded by a fence. Access to the reclaimed water facilities will be limited to trained Facility site personnel and qualified vendors. Public access to the Facility, and hence the cooling tower area, is restricted.

HDPP has direct and sole control of the construction, operation and maintenance of piping within the Facility site, including backflow prevention and onsite use. A Facility supervisor shall be designated and will be responsible for the operation, maintenance, and monitoring of the reclaimed and potable water systems to ensure no cross-connections are made between the two systems. The design of the reclaimed water system on the Facility site is such that cross-connection with any other water system onsite is impossible without performance of construction work to modify the system. Therefore, there will be no cross-connection between the reclaimed water and SWP water, potable water, or fire suppression systems.

The design and construction of the reclaimed water system within the Facility site will comply with the state and county regulations and guidelines. This specifically includes an air gap of at least one foot between the reclaimed water discharge pipe end and the cooling tower water in the basin. There is no direct connection of reclaimed water to the cooling tower water or any other equipment. This is the same discharge design as employed in the existing cooling tower make-up system using treated SWP water.

The reclaimed water system will be installed in accordance with CDPH guidelines. Reclaimed water piping to the cooling tower will be installed in compliance with required separation from other water pipelines and the cooling tower water basin. A cross-connection is any unprotected actual or potential connection between a public or an end user's water supply system and reclaimed water. No cross-connections between the onsite potable water or fire

suppression systems and the reclaimed water pipeline are contemplated and would not be allowed under any circumstances. Reclaimed water piping to the cooling tower will terminate at the cooling tower basin.

2.7 Construction Inspection and Initial Testing

Construction, inspection and start-up testing of the reclaimed water pipeline and interconnection to the Facility will be conducted in accordance with methods developed by the City based on the requirements of Title 22 and Title 17. Copies of all inspection reports will be provided to the CDPH.

2.8 Ongoing Inspection and Testing

Ongoing inspection and testing will be conducted in accordance with the City's inspection procedures based upon the principles provided in Title 22 and Title 17. The City will verify that signs have been installed and tamper-detect seals placed at initial startup of the reclaimed water services and during subsequent inspections. Prior to final operation of the reclaimed water system, a cross-connection inspection will be performed. In addition to the initial cross-connection control inspection, annual inspections will be performed by the City.

2.9 Employee Training

The City already operates a recycled water system and currently employs personnel trained in the safe construction, operation and maintenance of the system. A training session will be conducted by the City for the Facility supervisor on the approved and appropriate uses, guidelines, and stipulations regarding operation of the reclaimed water system. After training, the supervisor will be responsible for maintaining strict control of the onsite reclaimed water system and conducting follow-up education/training sessions.

2.10 Necessity of Proposed Change

Section 1769(a)(1)(B) and 1769(a)(1)(C) of the Commission's Siting Regulations require a discussion of the necessity for the proposed change and whether this modification is based on information that was known by HDPP during the certification proceeding.

The necessity of the proposed change is to allow the Facility to use reclaimed water to the maximum extent feasible. The modification is not based on information known to HDPP at the time of certification because the use of reclaimed water at the Facility was not permitted.

3.0 Environmental Analysis of the Amendment

This Section 3.0 examines whether the reclaimed water pipeline as set forth in this Supplement may result in additional environmental impacts.

This type of water pipeline, which consists of an underground pipe approximately 1,700 feet in length and located on public land or in a public right of way, is typically categorically exempt from CEQA.⁶ A categorical exemption creates a presumption that the project will have no effect on the environment and, absent unusual circumstances, requires no further environmental analysis.

While HDPP believes that this water pipeline is categorically exempt, an environmental analysis for the modifications identified in this Amendment is presented below. This Section 3.0 concludes that there will be no significant adverse environmental impacts associated with this Amendment as Supplemented herein that the Facility will comply with all applicable LORS.

3.1 Air Quality

The construction of the reclaimed water pipeline, which will be approximately 1,700 feet in length, will result in the temporary production of minor quantities of criteria and non-criteria air pollutants in the form of fugitive dust and tailpipe emissions from construction equipment. As these elements of the project construction are expected to be very limited in duration, the associated air emissions are not expected to be significant. The installation and operation of the reclaimed water pipeline will not result in a cumulative increase in air emissions sufficient to create a significant air quality impact. Because these types of construction impacts are temporary and minor, the construction of a pipeline less than 1 mile in length is statutorily exempt under CEQA.

3.2 Biological Resources

The Final Decision for the Facility found that the “25-acre power plant site, situated on previously disturbed land on the former George Air Force Base and once used as a spoils area for storing miscellaneous refuse and debris, does not raise any significant biological resource issues.” (Final Decision, p. 136) The reclaimed water pipeline will be constructed on the perimeter of the 25-acre Facility site immediately outside the fence line, as well as a short segment within the Facility site for discharge into the cooling tower. Therefore, the construction of the underground reclaimed water pipeline will not result in any biological resource impacts.

3.3 Cultural Resources

The reclaimed water pipeline will be constructed on the perimeter of the 25-acre Facility site immediately outside the fence line, as well as a short segment within the Facility site for

⁶ Title 14, California Code of Regulations, section 15301.

discharge into the cooling tower. The 25-acre Facility site and the project area were previously inventoried for archaeological resources during the original AFC proceeding. “Despite these efforts,” according to the Final Decision, “no evidence of cultural resources was found within one-half mile of the power plant site.” (Final Decision, p. 150) Therefore, construction and use of the reclaimed water pipeline will not result in any cultural resource impacts.

3.4 Land Use

The reclaimed water pipeline will be constructed on the perimeter of the 25-acre Facility site immediately outside the fence line, as well as a short segment within the Facility site for discharge into the cooling tower. Therefore, construction and use of the reclaimed water pipeline will not result in any land use impacts.

3.5 Noise

The reclaimed water pipeline will be constructed on the perimeter of the 25-acre Facility site immediately outside the fence line, as well as a short segment within the Facility site for discharge into the cooling tower. The nearest sensitive noise receptors (the Harold H. George and the Shephard Schools, as well as the SCLA golf course) are approximately one and one quarter miles from HDPP. (Final Decision, pp. 194-195) Construction of the reclaimed water pipeline will cause short-term noise from excavation and operation of vehicles. The noises are not likely to be heard by any sensitive receptors, because of the distance of the receptors from the Facility. Therefore, construction of the water line will not result in any significant noise impacts.

3.6 Public Health

Construction of the reclaimed water pipeline will only result in a very small quantity of diesel emissions and fugitive dust emissions for a very limited period of time. These emissions will not result in adverse public health impacts.

3.7 Worker Safety and Health

Construction of the reclaimed water pipeline would not result in worker safety and health impacts any greater than those analyzed by the Commission during licensing, since these construction activities would be subject to the same training, plans, and practices as those required for all other construction activities of the City.

3.8 Socioeconomics

Due to the short length of the reclaimed water pipeline, its construction would not result in any significant increase in construction efforts, impact to the labor market, or cause an adverse impact to schools or other public services.

3.9 Agriculture and Soils

Construction of the reclaimed water pipeline will occur on previously disturbed land on the former George Air Force Base that was once used as a spoils area for storing miscellaneous

refuse. Therefore, construction and use of the reclaimed water pipeline will not result in any agricultural or soils impacts.

3.10 Traffic and Transportation

Construction of the reclaimed water pipeline will occur on the perimeter of the Facility site, and within the Facility, and briefly where the pipeline will connect to the existing 16-inch diameter reclaimed water pipeline in a public right-of-way on Perimeter Road. Adequate construction parking and equipment laydown areas are available within the Facility fence line. Therefore, construction and use of the reclaimed water pipeline will not result in any traffic and transportation impacts.

3.11 Visual Resources

The reclaimed water pipeline will be placed underground, except for a small portion on the Facility site where it will be aboveground for discharge into the cooling tower. Since the reclaimed water pipeline will be buried and not visible above ground, construction and use of the reclaimed water pipeline will not result in any visual impacts.

3.12 Hazardous Materials Management

Construction and use of the reclaimed water pipeline will not result in any new hazardous materials impacts that have not been analyzed by the Commission during the licensing of the Facility.

3.13 Waste Management

Construction and use of the reclaimed water pipeline will not result in significant increase in waste products. Therefore, waste management impacts will not be any different than those analyzed by the Commission during original licensing of the Facility.

3.14 Water Resources

Use of the reclaimed water pipeline will result in a change in water source. The use of reclaimed water will have a beneficial impact on the environment by allowing additional SWP fresh water to be used for other beneficial uses.

3.15 Geologic Hazards and Resources

Construction and use of the reclaimed water pipeline will not result in geologic impacts any different than those analyzed by the Commission during licensing of the Facility since the pipeline will be designed to meet seismic standards.

3.16 Paleontological Resources

The reclaimed water pipeline will be constructed on the perimeter of the 25-acre Facility site immediately outside the fence line, as well as a short segment within the Facility site for discharge into the cooling tower. The 25-acre project site and the project area were previously inventoried for paleontological resources. No paleontological resource impacts are expected to result from the construction of the reclaimed water pipeline.

3.17 Cumulative Impacts

Because the construction and operation of the approximately 1,700 foot underground reclaimed water pipeline will not result in any adverse environmental impacts, construction and use of the reclaimed water pipeline will not have a cumulative adverse impact.

3.18 Laws, Ordinances, Regulations, Standards

Thus, as described in this Amendment, the reclaimed water pipeline is consistent with all applicable LORS, and the Amendment will not alter the assumptions or conclusions made in the Commission's Final Decision.

4.0 Proposed Modifications to the Conditions of Certification

Consistent with the requirements of the Commission's Siting Regulations Section 1769 (a)(1)(A), this section 4.0 addresses proposed modifications to HDPP's Conditions of Certification.

Except as noted below, HDPP agrees with the Staff's proposed modification to Soil & Water Condition-1 presented in the April 16, 2009 Staff Analysis. Because this Supplement is being filed, a further Amendment is not needed to construct the reclaimed water pipeline and use reclaimed water at the Facility. Therefore, the following sentence that Commission Staff had proposed to add to Soil and Water Condition-1e is not necessary and should be deleted: ~~"Prior to use of recycled waste water the project owner shall provide the CPM with a specific amendment petition providing details of the recycled water line and connections, a copy of an agreement with VVWRA or other suppliers that will deliver recycled waste water, and any other information necessary to amend the project for the proposed recycled waste water use."~~

Additionally, Staff's proposed additional language regarding the project's need "...to make maximum use of recycled waste water for power plant cooling needs" might be read to imply that the project's facilities must be redesigned, reengineered, and reconstructed to accommodate cooling with 100% recycled water. Although use of 100% recycled water is ultimately the goal of HDPP, this Petition for Modification is designed to only allow the Facility to begin its use of reclaimed water, not to mandate 100% use of reclaimed water. The ability of the Facility to use reclaimed water is inherently tied to the capabilities of the Facility's design and equipment. Consequently, Staff's proposed phrase should be deleted to avoid confusion.

In summary, **Soil & Water Condition-1e** as presented in the Staff Analysis should be revised as follows:

~~"The project's water supply facilities shall be appropriately sized to meet project needs, and to make maximum use of recycled waste water for power plant cooling needs. Prior to use of recycled waste water the project owner shall provide the CPM with a specific amendment petition providing details of the recycled water line and connections, a copy of an agreement with VVWRA or other suppliers that will deliver recycled waste water, and any other information necessary to amend the project for the proposed recycled waste water use."~~

The project may incorporate use of recycled water in volumes and at rates commensurate with equipment capabilities.

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HDPP believes that provisions of Soil & Water Condition-4 are no longer reasonable nor applicable because the reduced availability of SWP water is in conflict with the Commission's modeled assumptions that were used to develop the certain conditions — specifically, the ABS milestones.

Currently, if a milestone is not met, the Facility is required to construct a reverse osmosis facility within one year to treat SWP water that is no longer likely to be available. The first milestone is 2500 acre-feet banked by April 21, 2011.

As stated in the April 16, 2009 Staff Analysis, HDPP agrees with Commission Staff that "...it is unrealistic to hold HDPP to the annual injection schedule as detailed in Soil and Water Condition-4 due to current SWP water availability..." HDPP also agrees with Commission Staff that "...Following connection to the recycled waste water supply line, the injection schedule may be modified by recalculating the volume of injection required...". The most appropriate time to modify the injection schedule is after the recycled pipeline is connected (as the Staff states) and after the project has developed a reasonable period of operating experience using the new recycled water supply and SWP water availability becomes more predictable under the new pumping regimes. Therefore, we recommend that the milestones be suspended for a period of time while the recycled water pipeline is installed and while the Facility develops an operating history with recycled water. Thereafter, and no later than five (5) years from the approval of this Petition, HDPP will file a subsequent Amendment petition proposing to either recalculate or eliminate the milestones.

In light of the preceding, the following addition to **Soil & Water Condition-4** should be made:

SOIL&WATER-4 Injection Schedule:

- a. The project owner shall inject one thousand (1000) acre-feet of SWP water within twelve (12) months of the commencement of the project's commercial operation.
- b. By the end of four years and two months from the start of commercial operation, the project owner shall install and begin operation of a pre-injection ultraviolet (UV) disinfection system.
- c. By the end of the fifth year of commercial operation, the project shall submit a report to the CPM demonstrating that HDPP has maintained an average THM concentration level consistent with the WDR permit requirements.
- d. The project shall install and implement a pre-injection reverse osmosis treatment system within one (1) year if any water banking milestone is not met as defined in the following table.

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Table of Milestones for Calculated Water Bank Reserve (1)

Water Banking Year	Anniversary Date (2)	End of Year Milestones (3)	Contingency Plan: Criteria for Installation of Reverse Osmosis
8	April 21, 2011	Water Banking Goal	Calculated Water Bank Reserve < 2,500 ac-ft
9	April 21, 2012	Water Banking Goal	Calculated Water Bank Reserve < 5,400 ac-ft
10	April 21, 2013	Water Banking Goal	Calculated Water Bank Reserve < 8,300 ac-ft
11	April 21, 2014	Water Banking Goal	Calculated Water Bank Reserve < 9,200 ac-ft
12	April 21, 2015	Water Banking Goal	Calculated Water Bank Reserve < 10,100 ac-ft
13	April 21, 2016	Water Banking Goal	Calculated Water Bank Reserve < 11,000 ac-ft
14	April 21, 2017	Water Banking Goal	Calculated Water Bank Reserve < 12,000 ac-ft
15	April 21, 2018	Water Banking Goal	Calculated Water Bank Reserve < 13,500 ac-ft

- (1) Calculated Water Bank Reserve = Injection minus Extraction minus Dissipation. (Amount of water available to HDPP is equal to Injection minus Extraction minus Dissipation minus 1000 acre-feet, as defined in SOIL&WATER-6.)
 - (2) Start of Commercial Operation: April 22, 2003.
 - (3) Milestones are designed to determine if injection falls significantly behind schedule.
- e. No later than the end of the fifteenth (15) year of commercial operation, the amount of water injected minus the amount of banked groundwater used for project operation, minus the amount of dissipated groundwater shall meet or exceed thirteen thousand (13,000) acre-feet.
 - f. After the requirement of section e has been satisfied and until three (3) years prior to project closure, the project owner shall replace banked groundwater used for project operation as soon as SWP water is available for sale by MWA. The project owner may choose to delay replacement of a limited quantity of banked groundwater used for project operations during aqueduct outages until the cumulative amount of groundwater withdrawn from the bank reaches one thousand (1,000) acre-feet.

Once the limit of one thousand (1,000) acre-feet has been reached, the project owner shall replace banked groundwater used for project

HIGH DESERT POWER PROJECT, LLC
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operation during aqueduct outages as soon as SWP water is available for sale by MWA.

- g. The provisions of SOIL&WATER-4d shall be suspended until the Commission rules on a specific amendment petition, which shall be submitted by the project owner no later than five (5) years from the effective date of the Commission Decision approving the addition of this condition g, and which shall propose either recalculation or elimination of water banking milestones. The amendment petition shall be based upon the demonstrated use and availability of recycled water at the project and the availability of SWP water for the project. The Calculated Water Bank Reserve for each Water Banking Year following the Commission Decision approving the addition of this condition g shall be 1000 acre-feet until the next Anniversary Date that is at least 12 calendar months after the Commission rules on the specific amendment petition.**

5.0 Potential Effects on the Public

Consistent with the requirements of the CEC Siting Regulations Section 1769 (a)(1)(G), this section addresses the proposed Amendment's effects on the public.

The reclaimed water pipeline will be constructed on the perimeter of the 25-acre Facility site immediately outside the fence line, as well as a short segment within the Facility site for discharge into the cooling tower. The reclaimed water pipeline will connect to the existing 16-inch diameter pipeline in a public right-of-way on Perimeter Road. The public effects associated with the reclaimed water pipeline are primarily associated with construction-related activities. Activities associated with excavating, grading, and trenching will generate minor, short-term air quality and noise impacts. However, due to the temporary nature of the construction, these impacts are insignificant.

Design of the reclaimed water pipeline will incorporate all applicable engineering codes and safety standards.

6.0 List of Property Owners

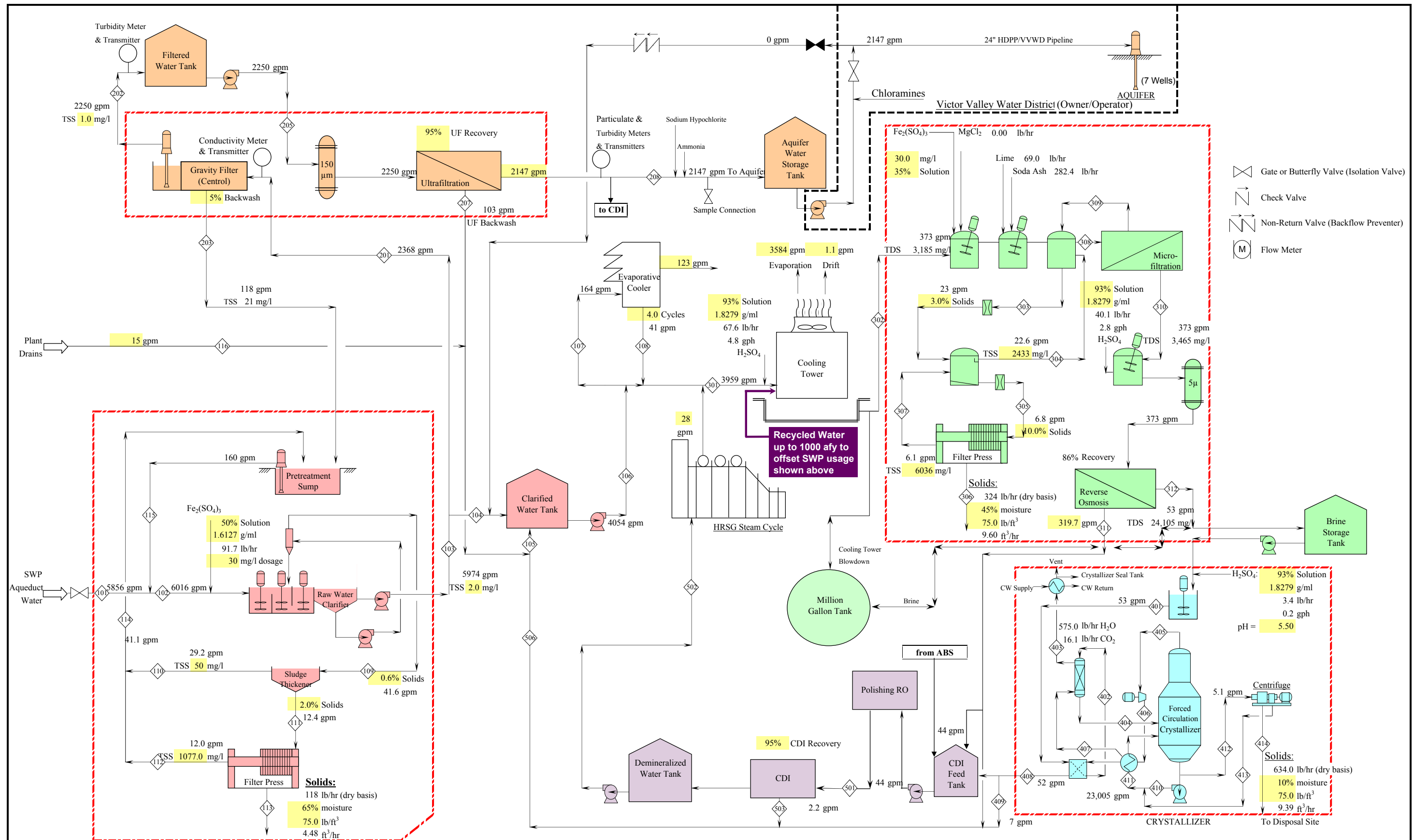
The Petition for modification provided a list of property owners in the vicinity of the Facility site. This same list remains applicable to the reclaimed water pipeline.

7.0 Potential Effects on Property Owners

Consistent with the Commission's Siting Regulations Section 1769(a)(1)(I), this section 7.0 addresses potential effects of the proposed Amendment on nearby property owners.

Due to the temporary nature of construction-related activities, the reclaimed water pipeline will not create any significant impacts on nearby property owners. Once construction is completed, the reclaimed water pipeline will be buried underground except for that small segment on the Facility site where the pipeline will rise aboveground for discharge into the cooling tower basin.

Appendix A



F	Issued for Start-up Planning	LDH	4-24-02
A	Added Instrumentation	JRB	8-2-01
D	Revised for Permit	JRB	6-28-01
C	Issued for Permit	JRB	6-14-01
B	Revised ABS	JRB	3-19-01
A	ISSUED FOR APPROVAL	JRB	3-15-01
REV.	DESCRIPTION		



KIEWIT INDUSTRIAL CO.
A Kiewit Company



HIGH DESERT POWER PROJECT LLC

HIGH DESERT POWER PROJECT



Water Treatment System
Water Balance
Case 4 (98°F, Avg Water Quality)

SHEET
1 of 1
DRAWING NUMBER
20-148-WB-004

Appendix B

**VICTOR VALLEY WASTEWATER RECLAMATION PLANT
DESIGN CRITERIA**

Item	Criteria
<u>INFLUENT FLOW METER</u>	
Type	Magnetic
Size	20 in
Capacity	0-30 mgd
<u>PRELIMINARY TREATMENT</u>	
Mechanically Cleaned Bar Screens*	
Number	2
Capacity (ea)	10.5 mgd
Manually Cleaned Bar Screens	
Number	1
Capacity	10.5 mgd
Aerated Grit Chambers	
Number	2
Volume (ea)	5775 cu ft
Capacity of Grit Dewatering Unit	2000 lbs/hr
Grit Cyclone/Classifier	1
Capacity (ea)	20.6 mgd
Grit/Screenings Production	1.4 cy/d
<u>PRIMARY TREATMENT</u>	
Primary Clarifiers	
Type	Rectangular
Number	4
Sidewater Depth	9 ft
Length	117 ft
Width	17 ft
Average Surface Loading Rate	1,200 gpd/sf
Average Detention Time	1.35 hr
Average BOD5 Removal	39%
Average Suspended Solids Removal	71%
Total Capacity (assuming peaking factor)	9.5 MGD
Primary Sludge Pumps	
Number	4
Type	Centrifugal Vortex
Capacity (ea)	75 gpm
Total Head	50 psi

VICTOR VALLEY WASTEWATER RECLAMATION PLANT DESIGN CRITERIA

Item	Criteria
<u>PARSHALL FLUME</u>	
Number	1
Size	18 in
Capacity	0.11-15.9 mgd
<u>FLOW EQUALIZATION BASINS</u>	
Basins	
Number	2
Total Volume	2.8 MG
Equalization Pumps	
Number	2
Capacity	4900 gpm @ 19 ft TDH
Equalization Aerators	
Number	8
Oxygen Transfer Rate, each	25 lbsO ₂ /hr
Motor, each	10 HP
<u>SECONDARY TREATMENT</u>	
Aeration Basins	
Number of Basins	8
Basin Dimensions for Basin 1,2,3,4	30' x 115'
Basin Dimensions for Basin 5,6,7,8	40' x 104'
Basin Side Water Depth, each	15 ft
Total Volume	3.4 MG
Anoxic Zone Location	Basins 2, 3, 5, 7
Anoxic Dimensions	2@29' x 30', 2@20' x 40'
Total Anoxic Volume	0.37
Mode of Operation	Nitrification/Denitrification
Total Capacity at 6 hour HRT	12.25 MGD
WAS Pumps*	
Number	2
Type	Centrifugal
Capacity (ea)	350 gpm @ 25 ft TDH
RAS Pumps	
Number	4
Type	Variable Speed Submersible
Capacity (ea)	4000 gpm

**VICTOR VALLEY WASTEWATER RECLAMATION PLANT
DESIGN CRITERIA**

Item	Criteria
Mixed Liquor Volatile Suspended Solids	1250 - 2500 mg/L
F/M Ratio	0.1 - 0.3 d ⁻¹
Mean Cell Residence Time	8 - 20 days
Secondary Clarifiers	
Type	Circular
Number	6
Diameter	5 - 55 ft, 1 - 80 ft
Average Water Depth	14 ft
Total Volume	1.77 MG
Overflow Rate	800 gpd/sf
Capacity with largest unit out of service	9.5 MGD
<u>TERTIARY TREATMENT</u>	
Rapid Mix Chamber	
Number of Units	1
Length	10 ft
Width	5 ft
Average Water Depth	6.5 ft
Volume	325 cf
Flocculators	
Number of Cells	4
Number of Stages	2
Length of Each Cell	12.5 ft
Width of each Cell	12.5 ft
Average Water Depth	16 ft
Volume	2500 cf
Low Head ABW Filters	
Number of Units	2
Length	76 ft
Width	16 ft
Media Depth	
Sand	12 inch
Anthracite	12 inch
Filter Aids	Alum and Polymer
Max Filter Surface Loading Rate	2.0 gpm/sq ft
Capacity, (each unit)	3.5 MGD

VICTOR VALLEY WASTEWATER RECLAMATION PLANT DESIGN CRITERIA

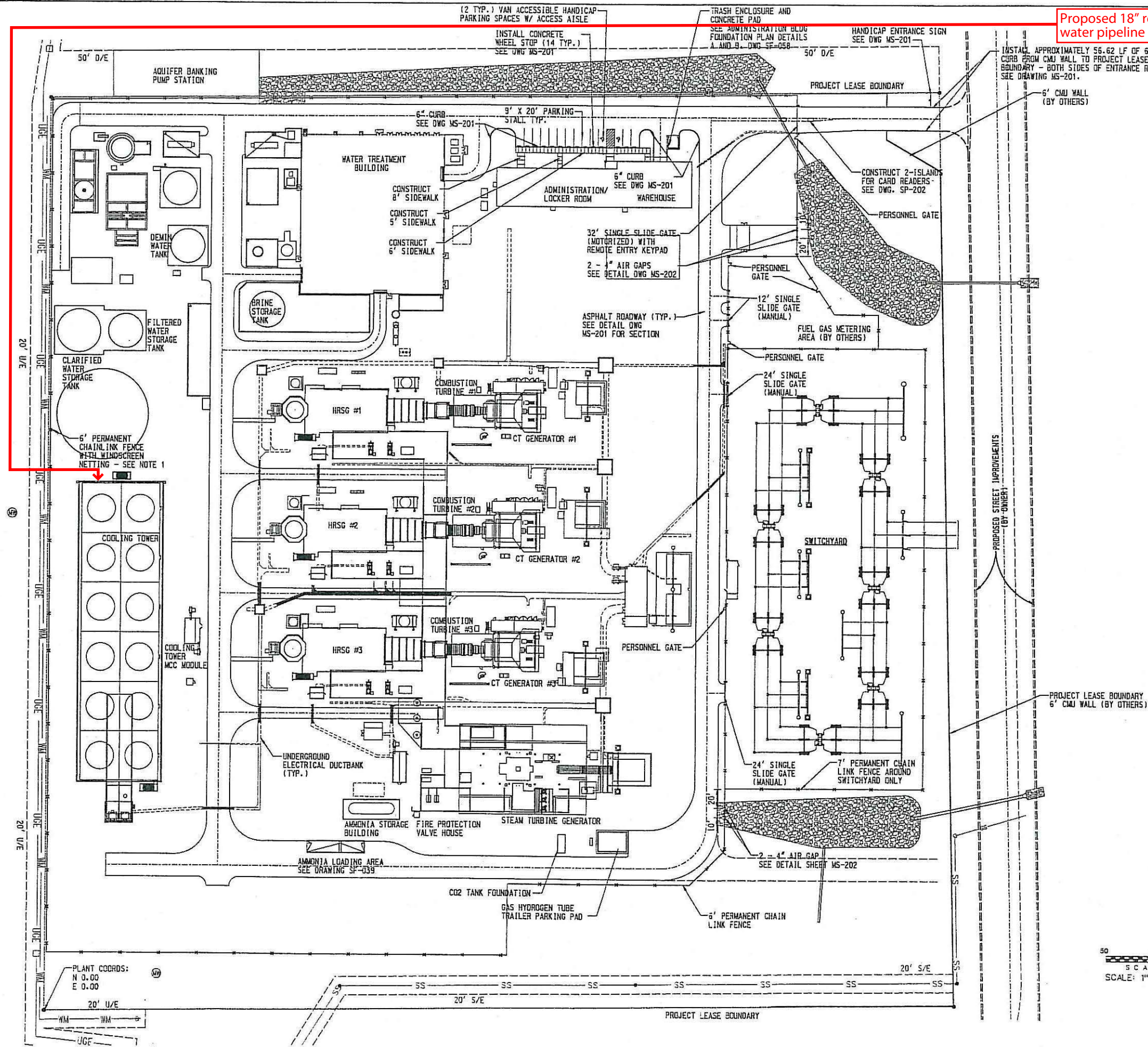
Item	Criteria
Continuous Backwashing Filtration System	
Type	DynaSand Filter
Number of Filter cells	6
Number of Filter modules	24
Filter Area per module	50 sq ft
Media Depth	40 in
Max Filter Surface Loading Rate	5.0 gpm/ sq ft
Total Capacity	8.75 MGD
<u>DISINFECTION</u>	
Chlorine Contact Tank	
Number of Units	3
Length	92.5 ft
Width	38 ft
Side Water Depth, average	9.5 ft
Capacity at 120 min detention time	9.5 MGD
Chlorinators	
Number of Chlorinators	2
Capacity, each	2000 lb/d
Chlorine Storage	
Number of Storage Tanks	14
Total Capacity	14 tons
<u>FINAL EFFLUENT</u>	
Recycled Pump Station	
Number of Pumps	2
Capacity/each	2,400 gpm
Horsepower	250 HP
Plant Water Pump	
Number of Service Water Pumps	3
Capacity/each	450 gpm @230 ft
Horsepower	1-35 HP and 2-50 HP
Final Effluent Parshal Flume	
Number	1
Size	18 inches
Capacity	0.11 - 15.9 mgd

**VICTOR VALLEY WASTEWATER RECLAMATION PLANT
DESIGN CRITERIA**

Item	Criteria
<u>Sludge Handling Facilities</u>	
DAF	
Number	2
Capacity	9.5 MGD
Anaerobic Digesters	
Number	3
Capacity	9.5 MGD
Mode	mesophilic
Percolation Ponds	
Number	6
Capacity	1.2 MGD annual average
Sludge Lagoons	
Number	3
Capacity/each	4.0 MG
Sludge Drying Beds	
Number	4
Capacity/each	1.0 MG

Appendix C

FILE NAME: 20145SP-201.DGN



Proposed 18" recycled water pipeline

NOTES:

1. WINDSCREEN NETTING IS ON FENCE ON WEST SIDE OF PLANT SITE ONLY.
2. REFER TO VYCE CONDITIONAL USE PERMIT SITE PLAN FOR 6' CMU WALL. (NOT IN THIS CONTRACT).

SEE RFI #'S
C-003

KDPF JOBSITE - RECEIVED

APR 25 2003

KIEWIT INDUSTRIAL COMPANY

REV.	DESCRIPTION	PREP	CHK	DATE
1	CONFORMED TO CONSTRUCTION RECORDS	SMC	DAW	04-23-03
2	REVISED FENCING AROUND GAS METERING AREA AND ROAD AT THE CO2 & HYDROGEN PADS	CEL	FGA	05-02-02
3	REVISED GRADING & RIP-RAP FOR AQUIFER BANKING PUMP STATION	BAC	FGA	03-21-02
4	REMOVED CURB AND GUTTER AT ADMIN BLDG, ADDED ISLANDS AT ACCESS GATE	CEL	DAW	01-02-02
5	ADDED CURB AND GUTTER AT ENTRANCE	SMC	FGA	11-13-01
6	ADDED CURB AND GUTTER HANDICAP SIGN	SMC	FGA	10-24-01
7	ADDED TRASH ENCLOSURE & SIDEWALK AT ADMIN BLDG	CEL	DAW	09-21-01
8	ISSUED FOR CONSTRUCTION	CEL	DAW	08-31-01

Bibb and associates
2455 Linn Drive
Lincoln, Nebraska 68514

DAVID ALAN GREER
NO. C45093
EXPIRES 6-30-2008
CIVIL
STATE OF CALIFORNIA

KIEWIT INDUSTRIAL CO.
A Kiewit Company

HIGH DESERT POWER PROJECT LLC

HIGH DESERT POWER PROJECT

FINAL SITE PLAN

DESIGNED	by	DATE	SHEET
DRAWN	BAC/CEL	07-16-01	1 of 1
CHECKED	CEL	07-16-01	DRAWING NUMBER
APPROVED	DAW	08-31-01	20-148-SP-201
	WJRM	08-31-01	

